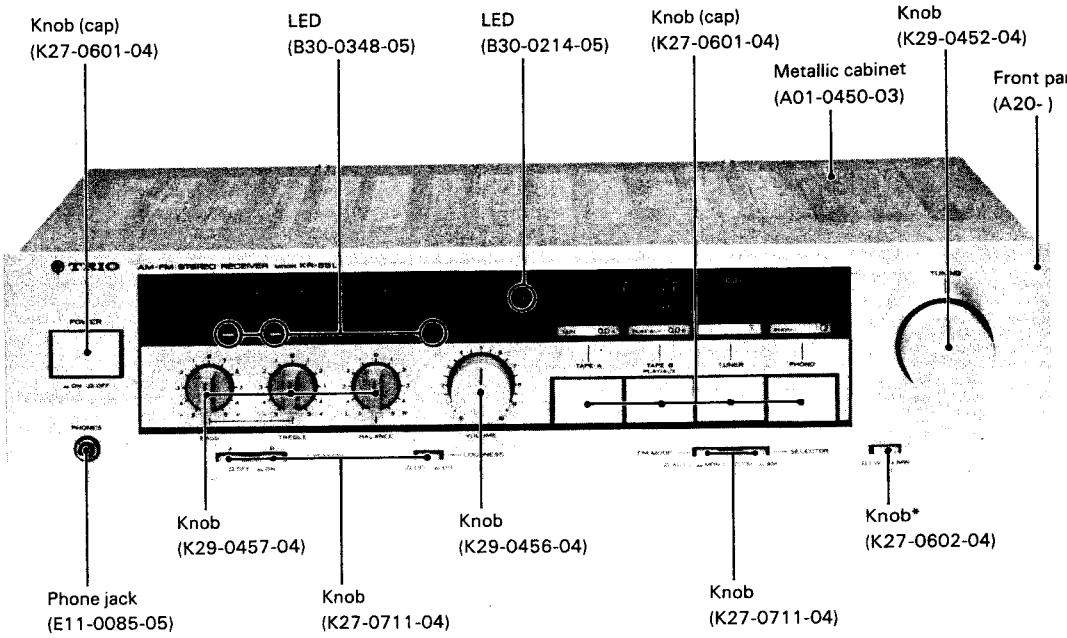
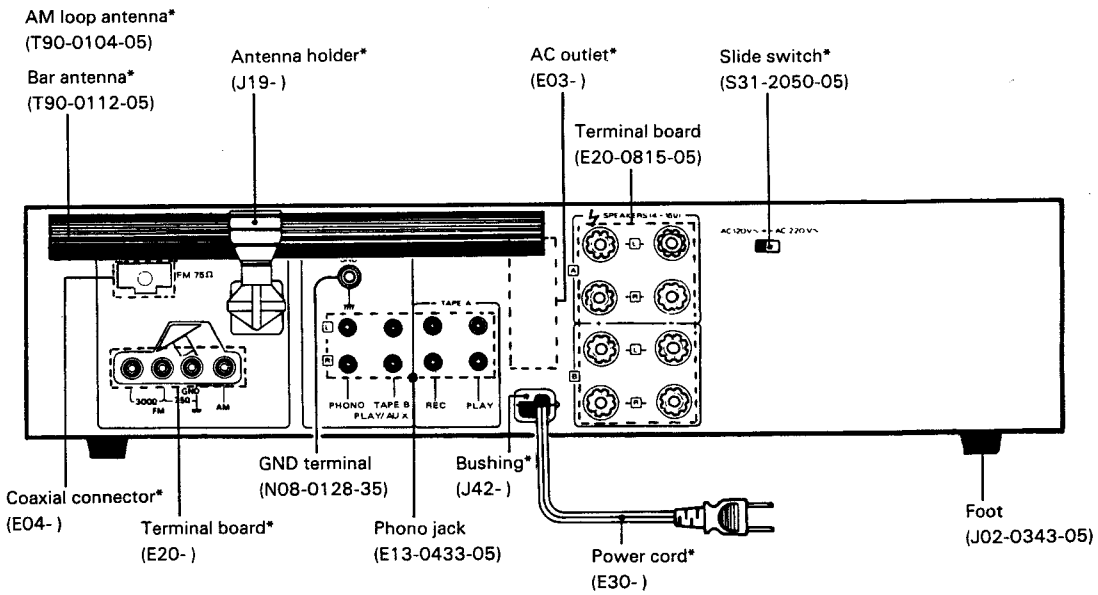
SERVICE MANUAL

KENWOOD

KR-65/65L

AM-FM STEREO RECEIVER

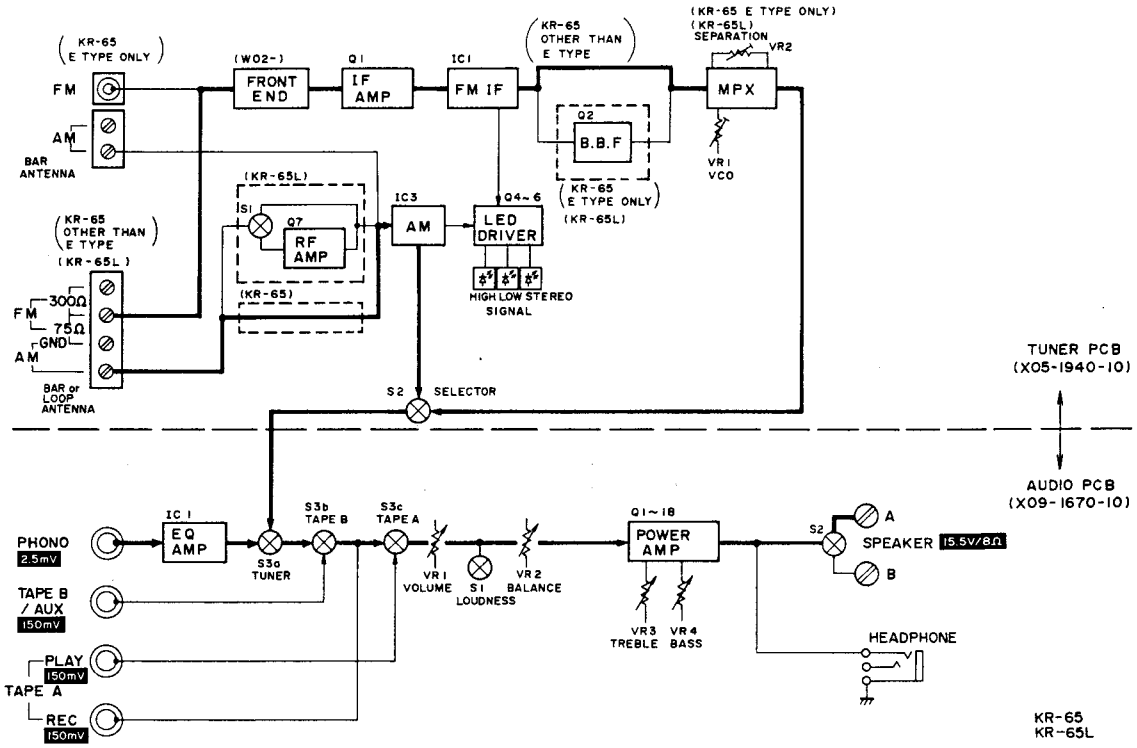




* Refer to parts list on page 12.
Photo is KR-65L (T type).

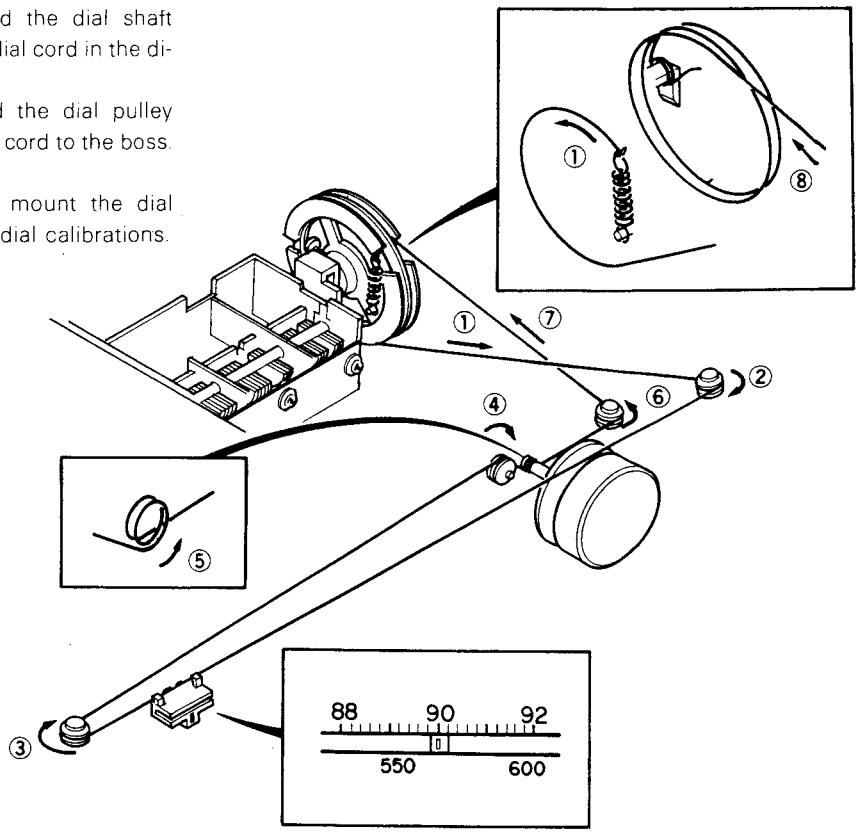
BLOCK DIAGRAM/DIAL CORD STRINGING

BLOCK DIAGRAM



DIAL CORD STRINGING

1. Tie the end of the dial cord to the spring. Dress the dial cord in the direction ① through ④.
2. Wind the dial cord two turns around the dial shaft starting from its lower side. Dress the dial cord in the direction ⑤ through ⑦.
3. Wind the dial cord two turns around the dial pulley starting from its upper side. Fix the dial cord to the boss. (⑧)
4. Receive a 90 MHz signal and then mount the dial pointer at the 90 MHz position of the dial calibrations.



ADJUSTMENT

NO.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	RECEIVER SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG.
FM SECTION			INPUT SELECTOR: FM MODE: STEREO				
1	**DISCRIMINATOR (1)**	(A) 98.0 MHz 1 kHz ± 75 kHz dev	(B)	MONO 98.0 MHz	TUNING KNOB	Adjust the tuning knob so that the same amount of noise is observed at the top and bottom of the output waveform with a weak signal.	
2	**DISCRIMINATOR (2)**	(A) 98.0 MHz 1 kHz ± 75 kHz dev 60 dB (ANT input)	Connect a DC voltmeter across R18.	MONO 98.0 MHz	L6	0V	(a)
3	**DISCRIMINATOR (3)**	(A) 98.0 MHz 1 kHz ± 75 kHz dev 60 dB (ANT input)	(B)	MONO 98.0 MHz	L7	Minimum distortion	
		Repeat alignments 2 and 3 several times.					
4	**VCO**	(A) 98.0 MHz 0 dev 60 dB (ANT input)	Connect a resistor (330 kΩ) to the junction of VR1 and R46 and connect a frequency counter via an AC voltmeter.	98.0 MHz	VR1	Frequency: 76.00 kHz	(b)
		VCO: Voltage Controlled Oscillator					
5	**SEPARATION**	(C) 98.0 MHz 1 kHz ± 68.25 kHz dev Selector: L or R Pilot: ± 6.75 kHz dev 60 dB (ANT input)	(B)	98.0 MHz	VR2	Minimum crosstalk. A compromise adjustment may be required if left-to-right and right-to-left separations are unequal.	
6	**DISTORTION (STEREO)**	(C) 98.0 MHz 1 kHz ± 68.25 kHz dev Selector: L or R Pilot: ± 6.75 kHz dev 60 dB (ANT input)	(B)	98.0 MHz	T1 (Front end)	Minimum distortion	
AM SECTION (KR-65)		Keep the loop antenna installed.		INPUT SELECTOR: AM			
(1)	**IF TRANSFORMER**	(D) 1000 kHz 400 Hz, 30% mod	(B)	1000 kHz	L8	Maximum amplitude and symmetry of the oscilloscope display.	
(2)	**RF ALIGNMENT (1)**	(D) 600 kHz 400 Hz, 30% mod	(B)	600 kHz	L2, 3	Maximum amplitude and symmetry of the oscilloscope display.	
(3)	**RF ALIGNMENT (2)**	(D) 1400 kHz 400 Hz, 30% mod	(B)	1400 kHz	TC1, 2 (Front end)	Maximum amplitude and symmetry of the oscilloscope display.	
		Repeat alignments (2) and (3) several times.					
AM-MW SECTION (KR-65L)				SELECTOR: AM			
(1)	**IF TRANSFORMER**	(D) 1000 kHz 400 Hz, 30% mod	(B)	1000 kHz	L8	Maximum amplitude and symmetry of the oscilloscope display.	
(2)	**RF ALIGNMENT (MW) (1)**	(D) 600 kHz 400 Hz, 30% mod	(B)	600 kHz	AM ferrite bar antenna (A) L3	Maximum amplitude and symmetry of the oscilloscope display.	
(3)	**RF ALIGNMENT (MW) (2)**	(D) 1400 kHz 400 Hz, 30% mod	(B)	1400 kHz	TC1, 2 (Front end)	Maximum amplitude and symmetry of the oscilloscope display.	
		Repeat alignments (2) and (3) several times.					
AM-LW SECTION (KR-65L)				SELECTOR: AM, LW			
(4)	**RF ALIGNMENT (LW) (1)**	(D) 170 kHz 400 Hz, 30% mod	(B)	170 kHz	AM ferrite bar antenna (B) L4	Maximum amplitude and symmetry of the oscilloscope display.	
(5)	**RF ALIGNMENT (LW) (2)**	(D) 325 kHz 400 Hz, 30% mod	(B)	325 kHz	TC1, 2	Maximum amplitude and symmetry of the oscilloscope display.	
		Repeat alignments (4) and (5) several times.					

REGLAGE

N°	ITEM	REGLAGE DE L'ENTREE	REGLAGE DE LA SORTIE	REGALAGE DU AMPLI-TUNER	POINTS L'ALIGNMENT	ALIGNER POUR	FIG.
SECTION MF			SELECTEUR DES ENTRESS: FM				
1	**DISCRIMINATEUR (1)**	(A) 98,0 MHz 1 kHz ± 75 kHz dév	(B)	MONO 98,0 MHz	Bouton d'accord	Ajuster le bouton d'accord de façon que la même quantité du bruit puisse être observè au sommet et en bas de la forme d'onde de sortie sous des conditions d'alimentation de signal faible.	
2	**DISCRIMINATEUR (2)**	(A) 98,0 MHz 1 kHz ± 75 kHz dév 60 dB (Entrée ANT)	Connecter un voltmètre CC sur R18.	MONO 98,0 MHz	L6	0V	(a)
3	**DISCRIMINATEUR (3)**	(A) 98,0 MHz 1 kHz ± 75 kHz dév 60 dB (Entrée ANT)	(B)	MONO 98,0 MHz	L7	Distorsion minimale	
			Répéter les points 2 et 3 plusieurs fois.				
4	**OSCILLATEUR CONTROLE PAR LA TENSION**	(A) 98,0 MHz 0 dév 60 dB (Entrée ANT)	Connecter une resistance (330 kΩ) à la jonction de VR1 et R46 et connecter un compteur de fréquence par un voltmètre CA.	98,0 MHz	VR1	Fréquence: 76,00 kHz	(b)
5	**SEPARATION**	(C) 98,0 MHz 1 kHz ± 68,25 kHz dév Selection: L ou R Signal pilote: ± 6,75 kHz dév 60 dB (Entrée ANT)	(B)	98,0 MHz	VR2	Diaphonie minimale. Un compromis de réglage peut être nécessaire si les séparations de gauche à droite et de droite à gauche sont inégales.	
6	**DISTORSION (STEREO)**	(C) 98,0 MHz 1 kHz ± 68,25 kHz dév Selection: L ou R Signal pilote: ± 6,75 kHz dév 60 dB (Entrée ANT)	(B)	98,0 MHz	T1 (Tête H.F.)	Distorsion minimale	
SECTION MA (KR-65)		Laisser l'antenne bouche MA installée.		SELECTEUR: AM			
(1)	**TRANSFORMATEUR F.I.**	(D) 1000 kHz 400 Hz, 30% mod	(B)	1000 kHz	L8	Amplitude et symétrie maximale de l'affichage de l'oscilloscope.	
(2)	**ALIGNEMENT H.T. (1)**	(D) 600 kHz 400 Hz, 30% mod	(B)	600 kHz	L2, 3	Amplitude et symétrie maximale de l'affichage de l'oscilloscope.	
(3)	**ALIGNEMENT H.T. (2)**	(D) 1400 kHz 400 Hz, 30% mod	(B)	1400 kHz	TC1, 2 (Tête H.F.)	Amplitude et symétrie maximale de l'affichage de l'oscilloscope.	
			Répéter les points (2) et (3) plusieurs fois.				
SECTION MA-OM (KR-65L)			SELECTEUR: AM				
(1)	**TRANSFORMATEUR F.I.**	(D) 1000 kHz 400 Hz, 30% mod	(B)	1000 kHz	L8	Amplitude et symétrie maximale de l'affichage de l'oscilloscope.	
(2)	**ALIGNEMENT H.T. (MW) (1)**	(D) 600 kHz 400 Hz, 30% mod	(B)	600 kHz	Antenne MA (A) L3	Amplitude et symétrie maximale de l'affichage de l'oscilloscope.	
(3)	**ALIGNMENT H.T. (MW) (2)**	(D) 1400 kHz 400 Hz, 30% mod	(B)	1400 kHz	TC1, 2 (Tête H.F.)	Amplitude et symétrie maximale de l'affichage de l'oscilloscope.	
			Repéter les alignements (2) et (3) plusieurs fois.				
SECTION MA-OL (KR-65L)			SELECTEUR: AM, LW				
(4)	**ALIGNEMENT H.T. (LW) (1)**	(D) 170 kHz 400 Hz, 30% mod	(B)	170 kHz	Antenne MA (B) L4	Amplitude et symétrie maximale de l'affichage de l'oscilloscope.	
(5)	**ALIGNEMENT H.T. (LW) (2)**	(D) 325 kHz 400 Hz, 30% mod	(B)	325 kHz	TC1, 2	Amplitude et symétrie maximale de l'affichage de l'oscilloscope.	
			Repéter les alignments (4) et (5) plusieurs fois.				

ABGLEICH

NR.	GEGENSTAND	EINGANGS-EINSTELLUNG	AUSGANGS-EINSTELLUNG	RECEIVER-EINSTELLUNG	ABGLEICH-PUNKTE	ABGEICHEN FÜR	ABB.
UKW-EMPFANGSABTEILUNG		EINGANGSUMSCHALTER: FM					
1	**DISKRIMINATOR (1)**	(A) 98,0 MHz 1 kHz ± 75 kHz Hub	(B)	MONO 98,0 MHz	Abstimmknopf	Den Abstimmknopf so einstellen, daß an der oberen und unteren Grenze der Ausgangswellenform bei schwachem Signal dasselbe Gerausch auftritt.	
2	**DISKRIMINATOR (2)**	(A) 98,0 MHz 1 kHz ± 75 kHz hub 60 dB (ANT-Eingang)	Einen Gleichspannungsmesser über R18.	MONO 98,0 MHz	L6	OV	(a)
3	**DISKRIMINATOR (3)**	(A) 98,0 MHz 1 kHz ± 75 kHz Hub 60 dB (ANT-Eingang)	(B)	MONO 98,0 MHz	L7	Minimaler Kirrfaktor	
Abstimmungen 2 und 3 mehrere Male wiederholen.							
4	**SPANNUNGS-GEREGELTER OSZILLATOR**	(A) 98,0 MHz 0 Hub 60 dB (ANT-Eingang)	Einen Widerstand (330 kΩ) zur Verbindung von VR1 und R46 anschließen und Eine Frequenzmesser über einem Wechselspannungsmesser anschließen.	98,0 MHz	VR1	Frequenz: 76,00 kHz	(b)
5	**STEREO KANAL TRENNUNG**	(C) 98,0 MHz 1 kHz ± 68,25 kHz Hub Wähler: L oder R Pilotton: ± 6,75 kHz Hub 60 dB (ANT-Eingang)	(B)	98,0 MHz	VR2	Minimales Übersprechen. Eine Ausgleichrege lung kann notwendig sein, falls links-zu-rechts und rechts-zu-links. Trennungen ungleich sind.	
6	**KLIRRFAKTOR (STEREO)**	(C) 98,0 MHz 1 kHz ± 68,25 kHz Hub Wähler: L oder R Pilotton: ± 6,75 kHz Hub 60 dB (ANT-Eingang)	(B)	98,0 MHz	T1 (Frontende)	Minimaler Klirrfaktor	
MW-EMPFANGSABTEILUNG (KR-65)		Die MW-Rahmenantenne angebracht lassen.		WÄHLER: AM			
(1)	**ZF-ÜBERTRAGER**	(D) 1000 kHz 400 Hz, 30% mod	(B)	1000 kHz	L8	Maximale Amplitude und Symmetrie des Oszilloskopbildes.	
(2)	**HF-ABGLEICH (1)**	(D) 600 kHz 400 Hz, 30% mod	(B)	600 kHz	L2, 3	Maximale Amplitude und Symmetrie des Oszilloskopbildes	
(3)	**HF-ABGLEICH (2)**	(D) 1400 kHz 400 Hz, 30% mod	(B)	1400 kHz	TC1, 2 (Frontende)	Maximale Amplitude und Symmetrie des Oszilloskopbildes	
Abstimmungen (2) und (3) mehrere Male wiederholen.							
MW-EMPFANGSABTEILUNG (KR-65L)				WÄHLER: AM			
(1)	**ZF-ÜBERTRAGER**	(D) 1000 kHz 400 Hz, 30% mod	(B)	1000 kHz	L8	Maximale Amplitude und Symmetrie des Oszilloskopbildes.	
(2)	**HF-ABGLEICH (MW) (1)**	(D) 600 kHz 400 Hz, 30% mod	(B)	600 kHz	MW-Ferritantenne (A) L3	Maximale Amplitude und Symmetrie des Oszilloskopbildes	
(3)	**HF-ABGLEICH (MW) (2)**	(D) 1400 kHz 400 Hz, 30% mod	(B)	1400 kHz	TC1, 2 (Frontende)	Maximale Amplitude und Symmetrie des Oszilloskopbildes	
Abstimmungen (2) und (3) mehrere Male wiederholen.							
LW-EMPFANGSABTEILUNG (KR-65L)				WÄHLER: AM, LW			
(4)	**HF-ABGLEICH (LW) (1)**	(D) 170 kHz 400 Hz, 30% mod	(B)	170 kHz	MW-Ferritantenne (B) L4	Maximale Amplitude und Symmetrie des Oszilloskopbildes	
(5)	**HF-ABGLEICH (LW) (2)**	(D) 325 kHz 400 Hz, 30% mod	(B)	325 kHz	TC1, 2	Maximale Amplitude und Symmetrie des Oszilloskopbildes	
Abstimmungen (4) und (5) mehrere Male wiederholen.							

ADJUSTMENT/REGLAGES/ABGLEICH

FM FRONT END

When the FET and/or IC of the FM front end are replaced, perform the following adjustment.

(1) Set the FM-SG to 108 MHz, 1 kHz Mod, ±75 kHz Dev and connect it to the antenna terminal of the receiver.
(2) Set the dial pointer at 108 MHz.
(3) Adjust TC3, TCR and TCA so that the maximum output is derived.

When the FM front end is replaced, perform the following adjustment.

(1) Set the FM-SG to 90 MHz, 1 kHz Mod, ±75 kHz Dev 60 dB and connect it to the antenna terminal of the receiver.
(2) Receive the FM-SG signal.
(3) Fix the dial pointer at 90 MHz.

IDLE CURRENT

The idle current is determined by the resistance between the base and emitter of Q9 (Q10). In this model, fixed resistors R33 (R34) and R35 (R36) are used, instead of a trimming potentiometer, to adjust the idle current to 20 ~ 100 mA. Some units employ R33 (R34) or R35 (R36) and some units employ both R33 (R34) and R35 (R36).

When replacing the power or drive transistors, always check that the idle current is 20 ~ 100 mA.

CHECKING PROCEDURE

(1) Set the volume control to a minimum.
(2) Connect a DC voltmeter between the collectors of Q15 (Q16) and Q17 (Q18).
(3) Confirm that the DC voltmeter reading is 8.8 ~ 44 mV.
(4) If the DC voltmeter reading is not as specified, change the resistance between the base and emitter of Q9 (Q10) to obtain the specified value.

PARTIE FRONTALE FM

Si l'on remplace le FET et/ou IC, il convient d'effectuer le réglage suivant.

(1) Régler FM-SG sur 108 MHz, 1 kHz Mod, ±75 kHz Dev et connecter à la borne d'antenne du amplituner.
(2) Régler l'aiguille du cadran à 108 MHz.
(3) Régler TC3, TCR et TCA en sorte que la sortie maximale soit obtenue.

Si l'on remplace la partie frontale FM, il convient d'effectuer le réglage suivant.

(1) Régler FM-SG à 90 MHz, 1 kHz Mod, ± 75 kHz Dev 60 dB et le connecter à la borne d'antenne du récepteur.
(2) Recevoir le signal FM-SG.
(3) Fixer l'aiguille du cadran à 90 MHz.

COURANT DE POLARISATION

La courant de polarisation est déterminé par la résistance entre la base et l'émetteur de Q9 (Q10). Ce modèle est équipé des résistors non réglables R33 (R34) et R35 (R36), au lieu d'un potentiomètre trimmer, pour régler le courant de polarisation sur 20 ~ 100 mA. Certains dispositifs sont équipés de R33 (R34) ou R35 (R36) et d'autres sont équipés à la fois de R33 (R34) et R35 (R36).

Lors du remplacement du transistor d'alimentation ou du transistor d'entraînement, toujours s'assurer que le courant de polarisation est de 20 ~ 100 mA.

METHODE DE VERIFICATION

(1) Régler le contrôle du volume sur le minimum.
(2) Connecter un voltmètre CC entre les collecteurs de Q15 (Q16) et Q17 (Q18).
(3) S'assurer que la lecture du voltmètre CC indique 8,8 ~ 44 mV.
(4) Si la lecture du voltmètre CC n'est pas comme spécifiée, changer la résistance entre la base et l'émetteur de Q9 (Q10) pour obtenir la valeur spécifiée.

UKW-FRONTENDE

Beim Auswechseln des FETs und/oder des ICs, die Einstellung wie folgt vornehmen.

(1) Den UKW-Signalgenerator auf 108 MHz, 1 kHz Modulation und ±75 kHz Hub einstellen und mit der Antennenklemme des steuergeräts verbinden.
(2) Den Skalenzeiger auf 108 MHz stellen.
(3) TC3, TCR und TCA so einstellen, daß der Höchstausgang erhalten wird.

Beim Auswechseln des Frontendes, die Einstellung wie folgt vornehmen.

(1) Den UKW-Signalgenerator auf 90 MHz, 1 kHz Modulation ±75 kHz Hub, und 60 dB einstellen und mit der Antennenklemme des Steuergeräts verbinden.
(2) Den Steuergeräts so einstellen, daß das Meßsendersignal empfangen wird, während der Skalenzeiger auf 90 MHz zeigt.

LEERLAUFSTROM

Der Leerlaufstrom wird durch den Wiederstand zwischen der Basis und dem Emitter von Q9 (Q10) bestimmt. Dieses Modell ist mit Festwiederstand R33 (R34) und R35 (R36) ausgestattet, an Stelle von einem Trimmpotentiometer, um den Leerlaufstrom auf 20 ~ 100 mA einzustellen. Einige Modelle sind mit R33 (R34) und R35 (R36) zusammen.

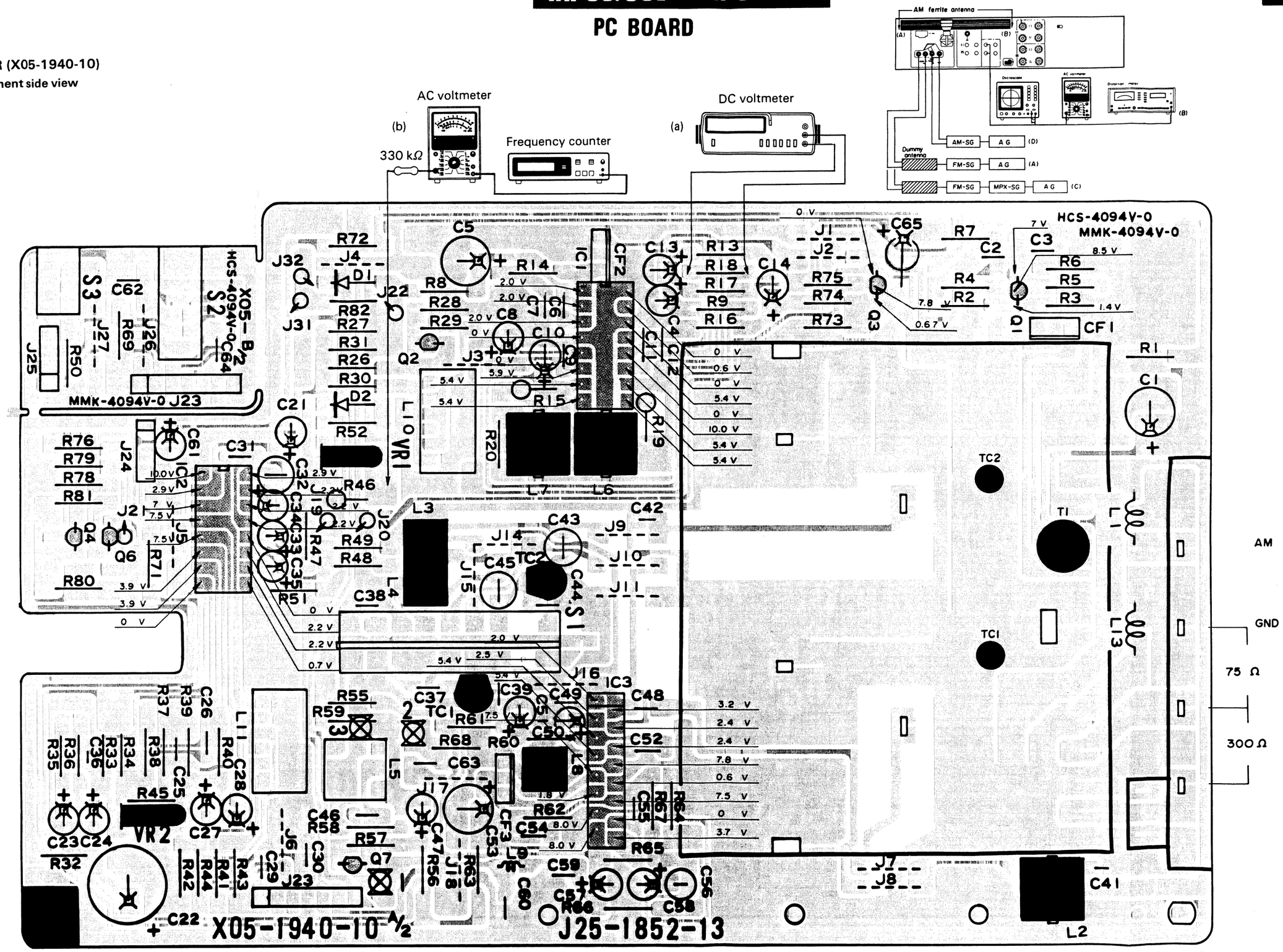
Beim Wechseln des Krafttransistors oder des Antriebstransistors, vergewissern Sie Sich immer daß der Leerlaufstrom 20 ~ 100 mA ist.

<PRÜFUNGSGANG>

(1) Den Lautstärkeknopf aufs Minimum stellen.
(2) Ein Gleichsannungsmesser zwischen den Kollektorer von Q15 (Q16) und Q17 (Q18) anschließen.
(3) Sich vergewissern, daß der Gleichspannungsmesser 8,8 ~ 44 mV anzeigt.
(4) Falls die Anzeige des Gleichspannungsmesser nicht wie angegeben ist, den Wiederstand zwischen der Basis und dem Emitter von Q9 (Q10) ändern um den angegebenen Wert zu erhalten.

PC BOARD

TUNER (X05-1940-10)
Component side view



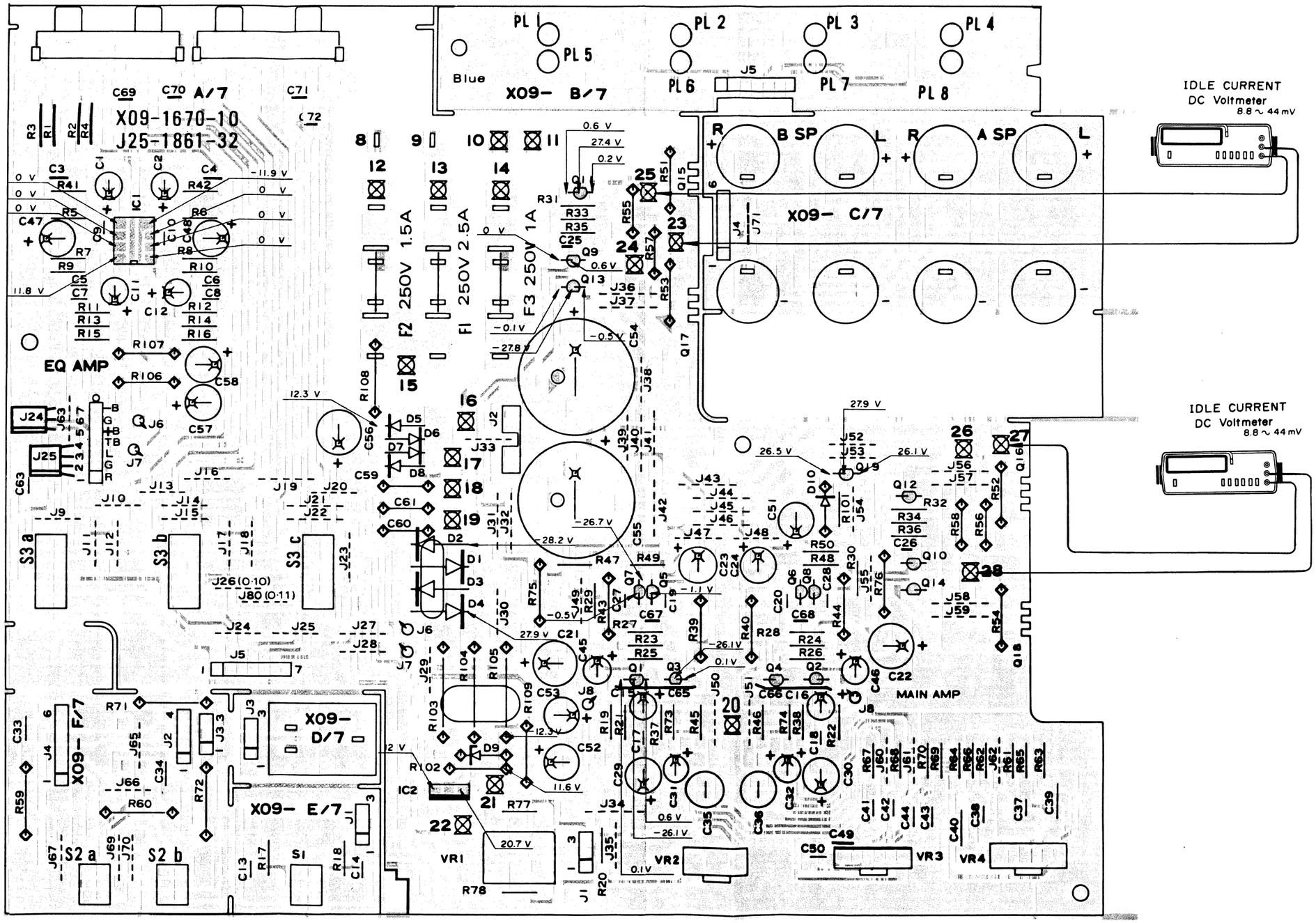
Refer to the schematic diagram for the value of resistors and capacitors.
The PC board drawing is viewed from the side easy to check.

KR-65/65L KR-65/65L

PC BOARD

AUDIO (X09-1670-11)

Component side view



Refer to the schematic diagram for the value of resistors and capacitors.
The PC board drawing is viewed from the side easy to check.

WAVEFORMS AT CHECK POINTS

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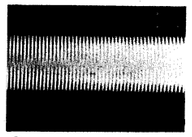
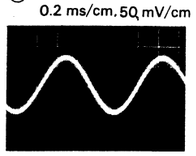
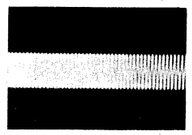
① IF out
0.5 μs/cm, 10 mV/cm



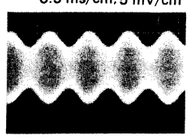
⑦ Tuner out
0.2 ms/cm, 50 mV/cm



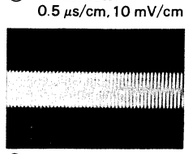
② Q1 base
0.5 μs/cm, 10 mV/cm



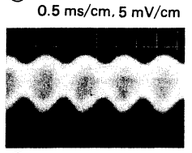
⑧ IC3-2
0.5 ms/cm, 5 mV/cm



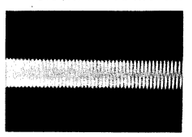
③ Q1 collector
0.5 μs/cm, 10 mV/cm



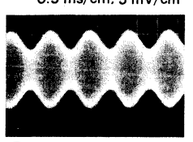
⑨ IC3-5
0.5 ms/cm, 5 mV/cm



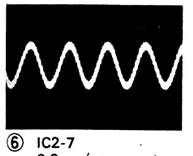
④ IC1-1
0.5 μs/cm, 10 mV/cm



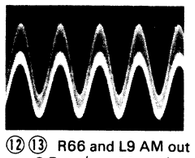
⑩ IC3-9
0.5 ms/cm, 5 mV/cm



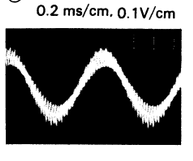
⑤ IC1-6
0.5 μs/cm, 50 mV/cm



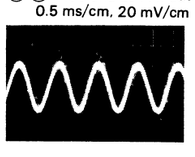
⑪ IC3-14
0.5 ms/cm, 20 mV/cm



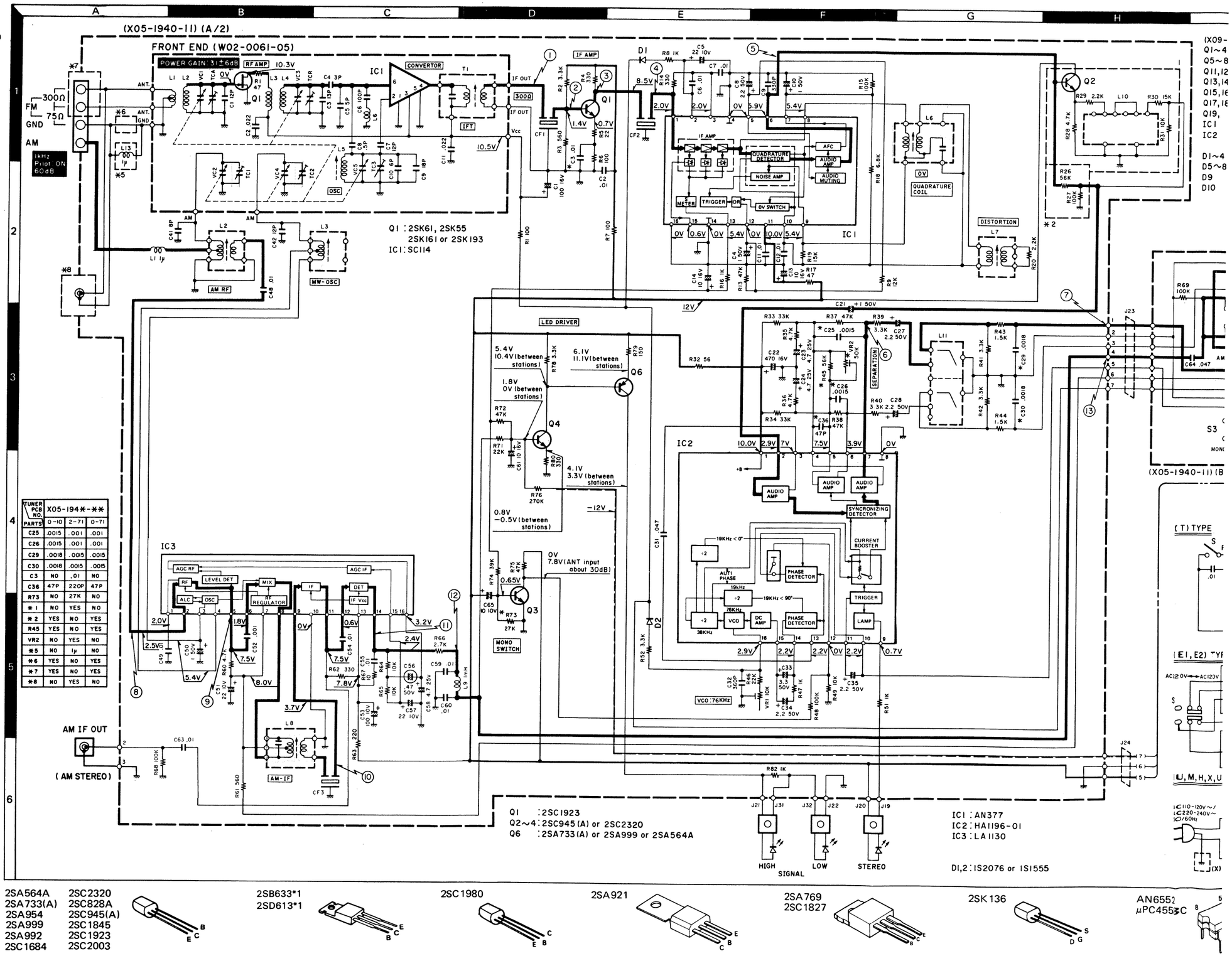
⑥ IC2-7
0.2 ms/cm, 0.1V/cm



⑫⑬ R66 and L9 AM out
0.5 ms/cm, 20 mV/cm



SEMICONDUCTOR SUBSTITUTIONS	
NAME	SUBSTITUTIONS
X09-167	
Q5 ~ 8	2SC1775
Q11, 12	2SC1735
Q13, 14	2SA850
Q15, 16	2SB690 (C)
Q17, 18	2SD726 (C)
D9	Zener voltage: 12V
IC1	NJM4558



TUNER PCB NO.	X05-194*-**		
PARTS	0-10	2-71	0-71
C25	.0015	.001	.001
C26	.0015	.001	.001
C29	.0018	.0015	.0015
C30	.0018	.0015	.0015
C3	NO	.01	NO
C36	47P	220P	47P
R73	NO	27K	NO
* 1	NO	YES	NO
* 2	YES	NO	YES
R45	YES	NO	YES
VR2	NO	YES	NO
* 5	NO	1μ	NO
* 6	YES	NO	YES
* 7	YES	NO	YES
* 8	NO	YES	NO

2SA564A 2SC2320
2SA733(A) 2SC828A
2SA954 2SC945(A)
2SA999 2SC1845
2SA992 2SC1923
2SC1684 2SC2003

2SB633*1
2SD613*1

2SC1980

2SA921

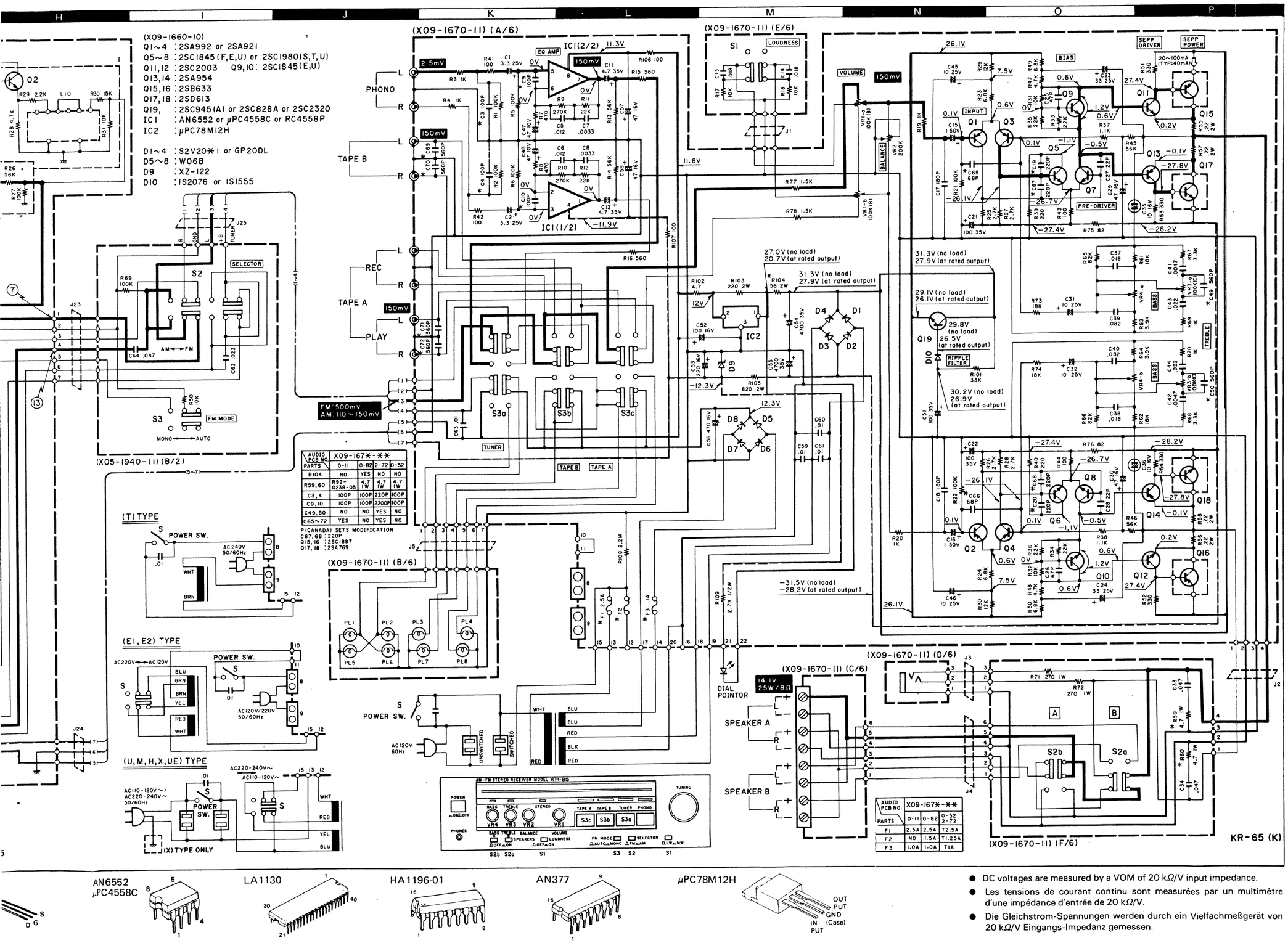
2SA769
2SC1827

2SK136

AN6552
μPC455C

AM-FM STEREO RECEIVER

KR-65



SPECIFICATIONS

POWER AMPLIFIER SECTION

Power Output

30 watts* per channel minimum RMS, both channels driven at 8 ohms from 40 Hz to 20,000 Hz with no more than 0.09% total harmonic distortion.

Both Channels Driven	
Into 8 ohms at 1,000 Hz	31W + 31W
Into 4 ohms at 1,000 Hz	31W + 31W
Dynamic Power Output at 4 ohms	100W
Total Harmonic Distortion (40 Hz to 20 kHz from AUX)	
rated power into 8 ohms	0.09%
1 watt power into 8 ohms	0.05%
Intermodulation Distortion (60 Hz : 7 kHz = 4 : 1 SMPTE)	
rated power into 8 ohms	0.04%
1 watt power into 8 ohms	0.03%
Damping Factor	30 at 1 kHz, 8 ohms
Input Sensitivity/Impedance	
PHONO	2.5 mV/50 kohms
TAPE, AUX	150 mV/50 kohms
Signal-to-Noise Ratio (A weighted)	
PHONO	72 dB for 2.5 mV input 78 dB for 5.0 mV input
TAPE, AUX	100 dB for 150 mV input
Maximum PHONO Input Level at 1,000 Hz	120 mV (RMS), THD 0.05%
Frequency Response	
PHONO RIAA Standard Curve	20 Hz to 20 kHz ±0.3 dB
TAPE, AUX	10 Hz to 100 kHz +0 dB −3 dB
Tone Control	
BASS	±8 dB at 100 Hz
TREBLE	±8 dB at 10 kHz
Loudness Control (VOL. −30 dB)	+10 dB at 100 Hz
Output Level/Impedance	
TAPE REC Out (Pin)	150 mV/560 ohms
FM TUNER SECTION	
Usable Sensitivity	10.8 dBf (1.9 μV)
50 dB Quieting Sensitivity	
Mono	17.2 dBf (4.0 μV)
Stereo	37.2 dBf (40 μV)
Signal-to-Noise Ratio at 65 dBf	
Mono	75 dB
Stereo	70 dB
Total Harmonic Distortion at 1,000 Hz	
Mono	0.1%
Stereo	0.2%
Frequency Response	30 Hz to 15 kHz +0.2 dB, −2.0 dB
Capture Ratio	1.5 dB
Image Rejection Ratio	50 dB
Spurious Response Ratio	80 dB
IF Response Ratio	90 dB
Alternate Channel Selectivity	45 dB at 400 kHz
AM Suppression Ratio	65 dB
Stereo Separation Ratio	40 dB at 1,000 Hz 35 dB at 50 Hz to 10 kHz
Subcarrier Product Ratio	45 dB
Antenne Impedance	300 ohms balanced and 75 ohms unbalanced
FM Frequency Range	87.5 MHz to 108 MHz
AM TUNER SECTION	
Usable Sensitivity	13 μV
Signal-to-Noise Ratio	48 dB
Image Rejection	45 dB
Selectivity	25 dB
GENERAL	
Power Consumption	1.1A (UL and CSA) 120W (8 ohms at rated power) 200W (IEC) 80W (Others) 22W (No Signal)
AC Outlets	Switched 1, Unswitched 1
Dimensions	W 440 mm (17-5/16") H 109 mm (4-1/64") D 250 mm (9-5/64")
Weight (Net)	5.2 kg (11.4 lb)
(Gross)	5.8 kg (12.8 lb)

*Measured pursuant to Federal Trade Commission's Trade Regulation rule on Power Output Claims for Amplifier in U.S.A.

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AN6552
μPC4558C

LA1130

HA1196-01

AN377

μPC78M12H

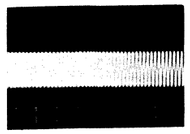
- DC voltages are measured by a VOM of 20 kΩ/V input impedance.
- Les tensions de courant continu sont measurées par un multimètre d'une impédance d'entrée de 20 kΩ/V.
- Die Gleichstrom-Spannungen werden durch ein Vielfachmeßgerät von 20 kΩ/V Eingangs-Impedanz gemessen.

WAVEFORMS AT CHECK POINTS

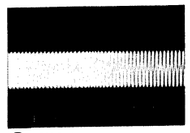
KENWOOD

① IF out
0.5 μs/cm, 10 mV/cm

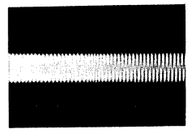
② Q1 base
0.5 μs/cm, 10 mV/cm



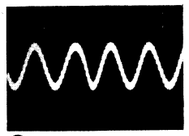
③ Q1 collector
0.5 μs/cm, 10 mV/cm



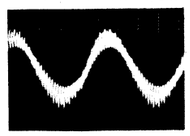
④ IC1-1
0.5 μs/cm, 10 mV/cm



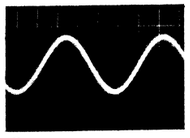
⑤ IC1-6
0.5 μs/cm, 50 mV/cm



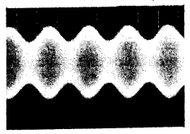
⑥ IC2-7
0.2 ms/cm, 0.1V/cm



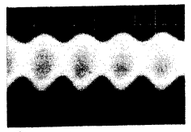
⑦ Tuner out
0.2 ms/cm, 50 mV/cm



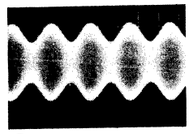
⑧ IC3-2
0.5 ms/cm, 5 mV/cm



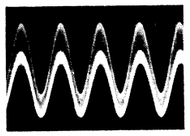
⑨ IC3-5
0.5 ms/cm, 5 mV/cm



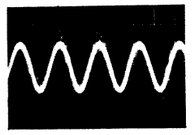
⑩ IC3-9
0.5 ms/cm, 5 mV/cm



⑪ IC3-14
0.5 ms/cm, 20 mV/cm



⑫⑬ R66 and L9 AM out
0.5 ms/cm, 20 mV/cm



SEMICONDUCTOR SUBSTITUTIONS	
NAME	SUBSTITUTIONS
X09-167	
Q5 ~ 8	2SC1775
Q11, 12	2SC1735
Q13, 14	2SA850
Q15, 16	2SB690 (C)
Q17, 18	2SD726 (C)
D9	Zener voltage: 12V
IC1	NJM4558

(X05-1922-74) (A/2)

FRONT END (W02-0062-05)

POWER GAIN: 31±6dB

Q1 : 2SK61, 2SK55
2SK161 or 2SK193
IC1 : SC114

(X09-1660-10)
Q1~4 : 2SA992 or 2SA921
Q5~8 : 2SC1845(F,E,U) or
Q11,12 : 2SC2003 Q9,10
Q13,14 : 2SA954
Q15,16 : 2SB633
Q17,18 : 2SD613
Q19, : 2SC945(A) or 2SC
IC1 : AN6552 or μPC455
IC2 : μPC78M12H

D1~4 : S2V20*1 or GP20
D5~8 : W06B
D9 : XZ-122
D10 : IS2076 or IS1555

(X05-1922-74)(B/2)

Q1 : 2SC1923
Q2~4 : 2SC945(A) or 2SC2320
Q6 : 2SA733(A) or 2SA999 or 2SA564A
Q7 : 2SK136 or 2SK163

IC1 : AN377
IC2 : HA1196-01
IC3 : LA1130

D1,2 : IS2076 or IS1555

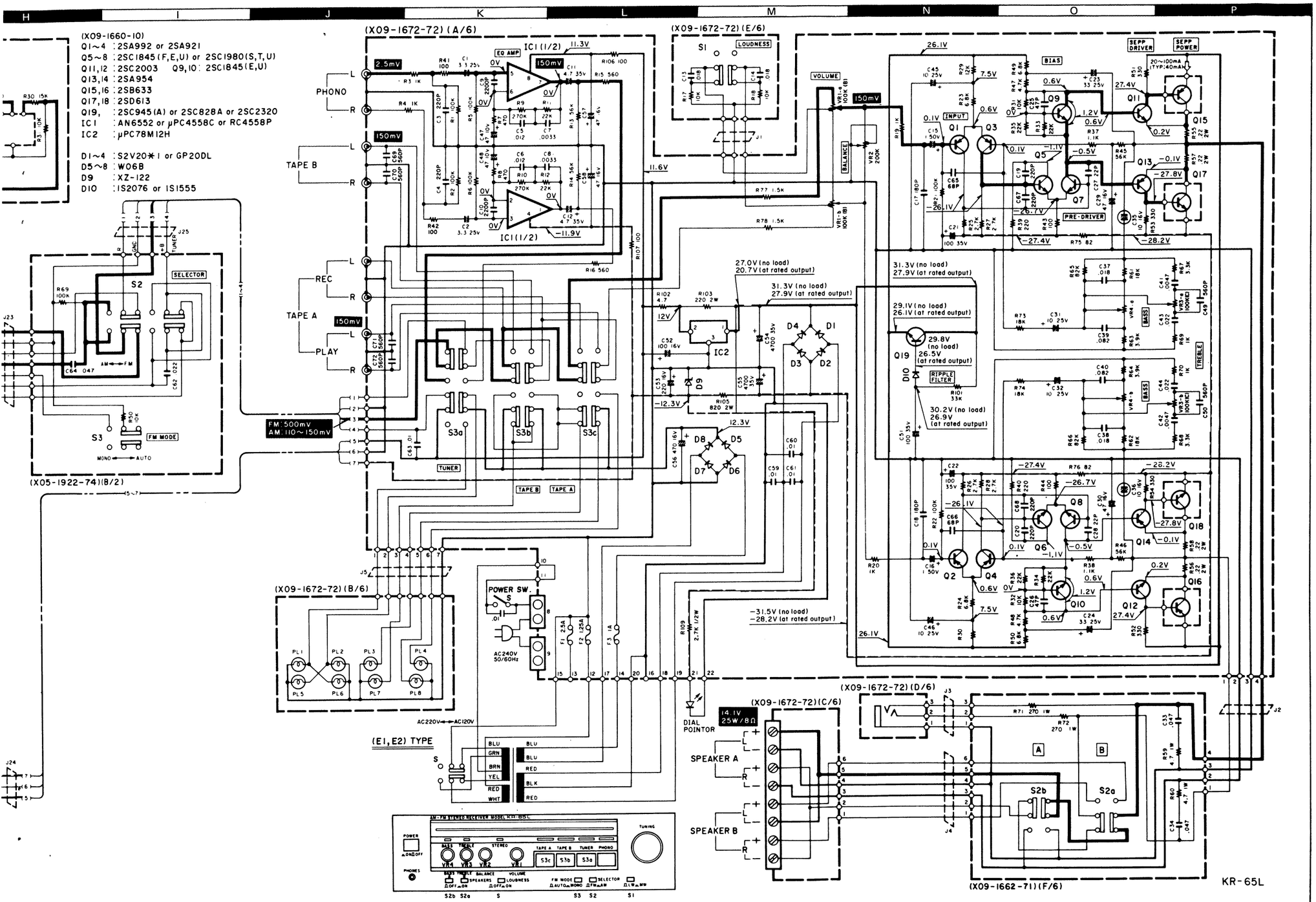
2SA564A	2SC2320		2SB633*1		2SC1980		2SA921		2SA769		2SK136		AN6552
2SA733(A)	2SC828A		2SD613*1						2SC1827				μPC4558C
2SA954	2SC945(A)												
2SA999	2SC1845												
2SA992	2SC1923												
2SC1684	2SC2003												

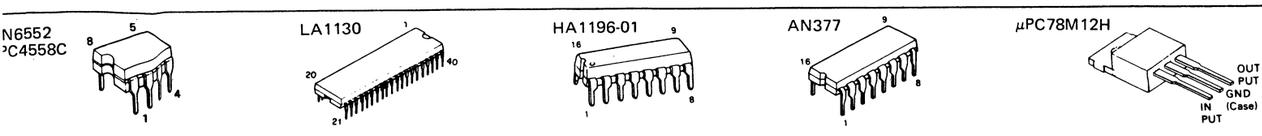
AM-FM STEREO RECEIVER

KR-65L

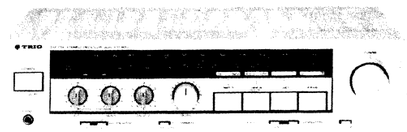
(X09-1660-10)
Q1~4 : 2SA992 or 2SA921
Q5~8 : 2SC1845(F,E,U) or 2SC1980(S,T,U)
Q11,12 : 2SC2003 Q9,10: 2SC1845(E,U)
Q13,14 : 2SA954
Q15,16 : 2SB633
Q17,18 : 2SD613
Q19, : 2SC945(A) or 2SC828A or 2SC2320
IC1 : AN6552 or μPC4558C or RC4558P
IC2 : μPC78M12H

D1~4 : S2V20＊1 or GP20DL
D5~8 : W06B
D9 : XZ-122
D10 : IS2076 or IS1555





- DC voltages are measured by a VOM of 20 kΩ/V input impedance.
- Les tensions de courant continu sont measurées par un multimètre d'une impédance d'entrée de 20 kΩ/V.
- Die Gleichstrom-Spannungen werden durch ein Vielfachmeßgerät von 20 kΩ/V Eingangs-Impedanz gemessen.



SPECIFICATIONS

AUDIO SECTION

Rated Power Output
- 8 ohms at 40 Hz to 20 kHz
  - no more than 0.09% T.H.D. (FTC) ..... 30W + 30W
- 4 ohms at 63 Hz to 12.5 kHz
  - no more than 0.7% T.H.D. (IEC) ..... 30W + 30W

Total Harmonic Distortion
- Rated Power Output into 8 ohms 0.09%

Intermodulation Distortion 0.04%

Frequency Response ..... 10 Hz ~ 100 kHz +0 dB, −3 dB

S/N Weighted: Rated Output Power (IEC-A)
( ) = Unweighted, at 50 mV (DIN)
- Phono ..... 78 db (55 dB)
- Tape, Aux ..... 100 dB (60 dB)

Damping Factor at 8 ohms, 1 kHz 30

Input Sensitivity/Impedance
- Phono ..... 2.5 mV/50 kΩ
- Tape, Aux ..... 150 mV/50 kΩ

Tone Control
- Bass 100 Hz ..... ±8 dB
- Treble 10 kHz ..... ±8 dB

Loudness Control (−30 dB) ..... +10 dB at 100 Hz

FM TUNER SECTION

Sensitivity at 75 ohms
- Mono: S/N 26 dB, 40 kHz Dev. ..... 0.9 μV
- Stereo: S/N 46 dB, 46 kHz Dev. ..... 25 μV

Limiting Level
- −3 dB Point, 40 kHz Dev. ..... 0.9 μV

Frequency Response ..... 30 Hz ~ 15 kHz +0.2 dB, −2.0 dB

Total Harmonic Distortion
- Mono: 1 kHz, 40 kHz Dev. 0.15%
- Stereo: 1 kHz, 46 kHz Dev. 0.3%

S/N Weighted (IEC-A)
- Mono: 40 kHz Dev., 1 mV Input ..... 70 dB
- Stereo: 48 kHz Dev., 1 mV Input ..... 65 dB

S/N Ratio (IHF)
- Mono: 75 kHz Dev., 1 mV Input ..... 75 dB
- Stereo: 75 kHz Dev., 1 mV Input ..... 70 dB

FM Stereo Separation: 1 mV Input (DIN)
- 250 Hz ..... 38 dB
- 1 kHz ..... 40 dB
- 6.3 kHz ..... 35 dB
- 12.5 kHz ..... 30 dB

Image Rejection Ratio ..... 50 dB

Selectivity
- 300 kHz, 20 dB Input ..... 70 dB

IF Rejection Ratio ..... 90 dB

AM Suppression Ratio ..... 65 dB

Spurious Response Ratio ..... 80 dB

Capture Ratio ..... 1.5 dB

MW TUNER SECTION

Sensitivity S/N 20 dB ..... 13 μV

S/N Ratio: 1 mV Input ..... 48 dB

Image Rejection Ratio ..... 45 dB

LW TUNER SECTION

Sensitivity S/N 20 dB ..... 14 μV

S/N Ratio: 1 mV Input ..... 48 dB

Image Rejection Ratio ..... 55 dB

GENERAL

Power Consumption
- IEC 200W
- Rated Power at 8 ohms 120W
- No signal 22W

Dimensions ..... W: 440 mm, H: 109 mm, D: 250 mm

Weight (net) ..... 5.2 kg

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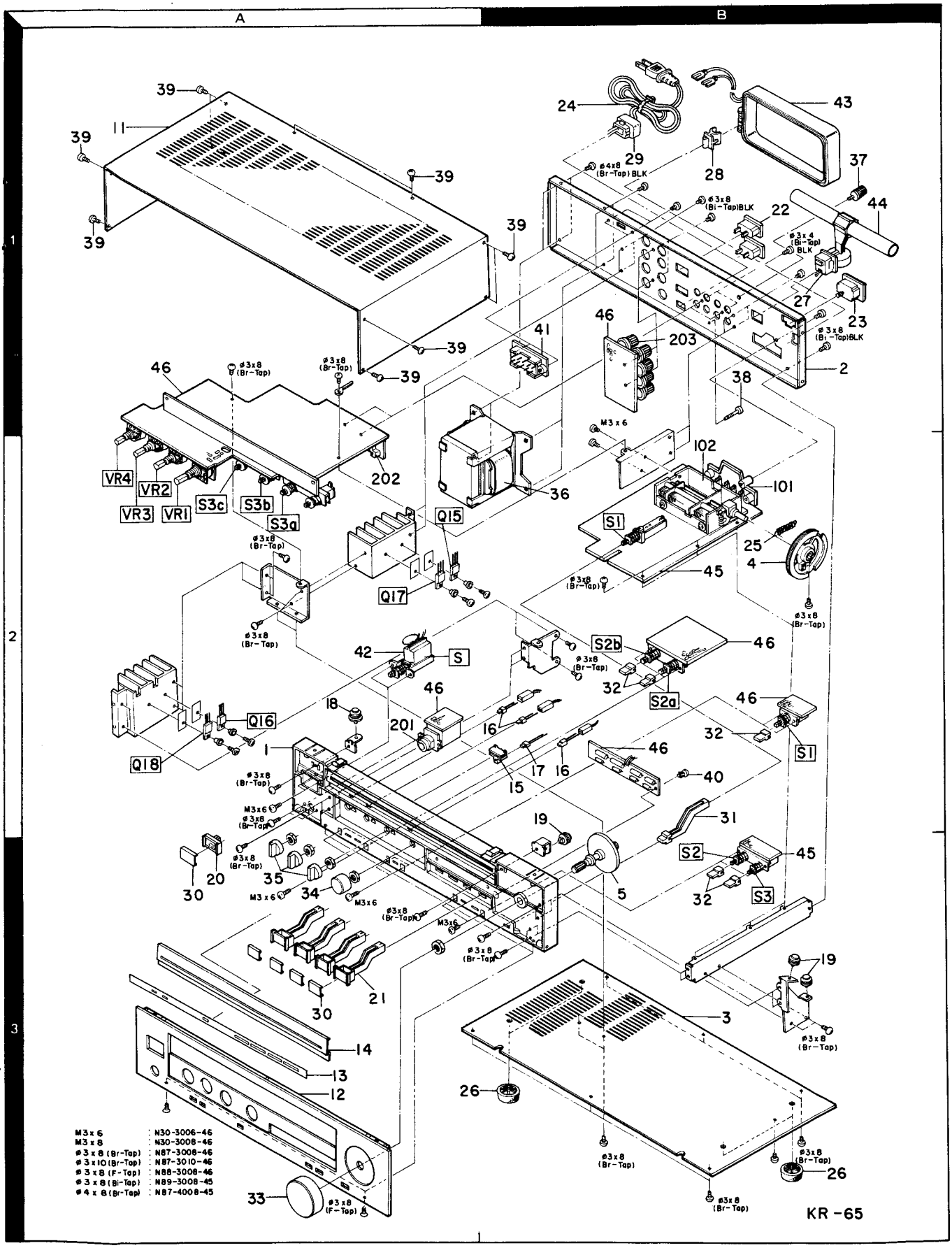
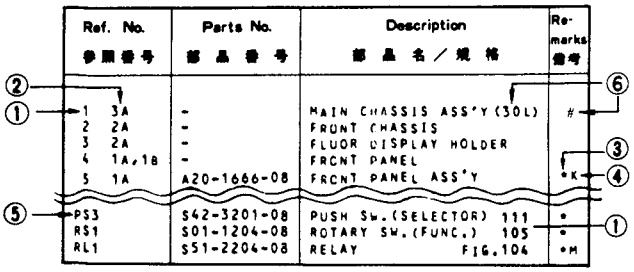
EXPLODED VIEW



PARTS LIST

INSTRUCTION FOR PARTS LIST



① Exploded view drawing No.
② Position in exploded view.
③ Symbol of new parts
④ Area to which parts are shipped. Example: A20-1666-08 is the part No. of FRONT PANEL ASS'Y for the "K" type products (for U.S.A.) When this column is blank, it means that the same type of parts (same parts No.) are used for the products shipped to all areas.
⑤ Reference No. in schematic diagram.
⑥ (30L) and # are KT30L

Abbreviations

* Abbreviations of capacitors (Parts No. with initial letter "C")

ELECTRO	Electrolytic capacitor
LL-ELEC	Low leak electrolytic capacitor
NP-ELEC	Non-pole electrolytic capacitor
MICA	Mica capacitor
POLYSTY	Polystyrene capacitor
MYLAR	Mylar capacitor
CERAMIC	Ceramic capacitor
TANTAL	Tantalum capacitor
MF	Metallized film capacitor
MP	Metallized paper capacitor
OIL	Oil capacitor

The unit "UF" is used in lieu of "μF"

* Abbreviations of resistors (Parts No. with initial letters "R")

RC	Carbon composition resistor
RD	Carbon film resistor
FL-PROOF RD	Flame-proof carbon film resistor
RW	Wire wound power resistor
FL-PROOF RS	Flame-proof metal oxide film resistor
RN	Metal film resistor
FUSE-RESIST	Resistor with fuse function
2B	Rated wattage 1/8W
2E	Rated wattage 1/4W
2H	Rated wattage 1/2W
3A	Rated wattage 1W
3D	Rated wattage 2W
3F	Rated wattage 3W
3G	Rated wattage 4W
3H	Rated wattage 5W

All resistor values are indicated with the unit (Ω) omitted.

* Abbreviations common to capacitors and resistors.

C	±0.25pF (Used for capacitors only)
D	±0.5pF (Used for capacitors only)
F	±1%
G	±2%
J	±5%
K	±10%
M	±20%
Z	+80%, −20% (Used for capacitors only)
P	+100%, −0% (Used for capacitors only)

Resistors RD (carbon composition resistors) are not listed in the parts list. For values, refer to the schematic diagram.

Ref. No. 参照番号	Parts No. 部品番号	Description 部品名／規格	Re-marks 備考
	KR-65/65L UNIT		
1 2A	NO STOCK	SUB PANEL	
2 1B	NO STOCK	REAR PANEL	
3 3B	NO STOCK	BOTTOM PLATE	
4 2B	NO STOCK	PULLEY	
5 3B	NO STOCK	DIAL SHAFT	
11 1A	A01-0450-03	METALLIC CABINET	
12 3A	A20-3089-02	FRONT PANEL ASSY	KP
12 3A	A20-3089-02	FRONT PANEL ASSY	UM
12 3A	A20-3089-02	FRONT PANEL ASSY	HX
12 3A	A20-3089-02	FRONT PANEL ASSY	UE
12 3A	A20-3090-02	FRONT PANEL ASSY	T
12 3A	A20-3091-02	FRONT PANEL ASSY	E
12 3A	A20-3092-02	FRONT PANEL ASSY	E
-	B46-0055-30	WARRANTY CARD	P
-	B46-0060-00	WARRANTY CARD	T
-	B46-0061-30	WARRANTY CARD	K
-	B46-0062-30	WARRANTY CARD	UH
-	B46-0062-30	WARRANTY CARD	UE
-	B46-0063-13	WARRANTY CARD	UH
-	B46-0063-13	WARRANTY CARD	UE
-	B46-0064-20	WARRANTY CARD	X
-	B46-0078-03	WARRANTY CARD	EE
-	B50-4304-00	INSTRUCTION MANUAL	*K
-	B50-4305-00	INSTRUCTION MANUAL	*P
-	B50-4305-00	INSTRUCTION MANUAL	MH
-	B50-4305-00	INSTRUCTION MANUAL	UE
-	B50-4305-00	INSTRUCTION MANUAL	X
-	B50-4306-00	INSTRUCTION MANUAL	*P
-	B50-4306-00	INSTRUCTION MANUAL	MX
-	B50-4307-00	INSTRUCTION MANUAL	*M
-	B50-4308-00	INSTRUCTION MANUAL	*T
-	B50-4309-00	INSTRUCTION MANUAL	*E
-	B50-4310-00	INSTRUCTION MANUAL	*E
13 3A	B08-0018-04	INDICATOR	
14 3A	B20-0514-04	DIAL CARIBRATIONS	KP
14 3A	B20-0514-04	DIAL CARIBRATIONS	UM
14 3A	B20-0514-04	DIAL CARIBRATIONS	HX
14 3A	B20-0514-04	DIAL CARIBRATIONS	UE
14 3A	B20-0514-04	DIAL CARIBRATIONS	E
14 3A	B20-0515-04	DIAL CARIBRATIONS	TE
15 2B	B21-0048-04	DIAL POINTER	
16 2B	B30-0214-05	LED(DIAL POINTER)	
17 2B	B30-0348-05	LED(SIGNAL,STEREO)	
-	C55-1710-38	CERAMIC 0.01UF Z	E
-	C91-0023-05	CERAMIC 0.01UF AC250V	UM
-	C91-0023-05	CERAMIC 0.01UF AC250V	HX
-	C91-0023-05	CERAMIC 0.01UF AC250V	UE
-	C91-0079-05	CERAMIC 0.01UF AC125V	KP
-	C91-0079-05	CERAMIC 0.01UF AC125V	TE
-	C91-0079-05	CERAMIC 0.01UF AC125V	E
18 2A	D15-0174-05	PULLEY ASSY(SMALL)	
19 3B	D15-0175-05	PULLEY(SMALL)	
20 3A	D21-0474-04	EXTENSION SHAFT(POWER)	
21 3A	D21-0486-04	EXTENSION SHAFT(SELECT)	
22 1B	E03-0036-05	AC OUTLET	KU
22 1B	E03-0036-05	AC OUTLET	MH
22 1B	E03-0036-05	AC OUTLET	UE
22 1B	E03-0036-05	AC OUTLET	X
22 1B	E03-0041-05	AC OUTLET	P

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Ref. No. 参照番号	Parts No. 部品番号	Description 部品名／規格	Remarks 備考
23 1B	E04-0004-05	COAXIAL CONNECTOR	TE
23 1B	E04-0006-05	COAXIAL CONNECTOR	E
24 1B	E30-0181-05	POWER CORD	KP
24 1B	E30-0459-05	POWER CORD	EE
24 1B	E30-0545-05	POWER CORD	UM
24 1B	E30-0545-05	POWER CORD	UE
24 1B	E30-0545-05	POWER CORD	H
24 1B	E30-0587-15	POWER CORD	T
24 1B	E30-0649-05	POWER CORD	X
25 2B	G01-0044-14	COIL SPRING(FRONT END)	
-	H01-3371-14	CARTON BOX	*K
-	H01-3371-14	CARTON BOX	PU
-	H01-3371-14	CARTON BOX	MH
-	H01-3371-14	CARTON BOX	XE
-	H01-3371-14	CARTON BOX	UE
-	H01-3372-14	CARTON BOX	*T
-	H01-3373-14	CARTON BOX	*E
-	H10-1573-02	POLYSTYRENE FIXTURE	
-	H12-0091-04	PACKING FIXTURE	
-	H20-0462-04	COVER	
-	H25-0078-04	BAG (235X315)	
-	J19-0306-05	LEAD CLAMPER	
-	J61-0045-15	WIRE BAND	
26 3B	J02-0343-05	FOOT	
27 1B	J19-0507-05	ANTENNA HOLDER (BAR)	TE
28 1B	J19-0564-05	ANTENNA HOLDER (LOOP)	KP
28 1B	J19-0564-05	ANTENNA HOLDER (LOOP)	UM
28 1B	J19-0564-05	ANTENNA HOLDER (LOOP)	HX
28 1B	J19-0564-05	ANTENNA HOLDER (LOOP)	UE
28 1B	J19-0564-05	ANTENNA HOLDER (LOOP)	E
29 1B	J42-0083-05	BUSHING	KP
29 1B	J42-0083-05	BUSHING	UM
29 1B	J42-0083-05	BUSHING	HT
29 1B	J42-0083-05	BUSHING	EE
29 1B	J42-0083-05	BUSHING	UE
29 1B	J42-0085-05	BUSHING	X
30 2B,3B	K27-0601-04	KNOB(CAP)(POWER,SELECT)	
31 2B	K27-0602-04	KNOB(LW SWITCH SHAFT)	TE
32 3A	K27-0711-04	KNOB(SP,LOUD,MODE,SEL)	
33 3A	K29-0452-04	KNOB(TUNING)	
34 3A	K29-0456-04	KNOB(VOLUME)	*
35 3A	K29-0457-04	KNOB(BASS,TREB,BAL)	*
36 2B	L01-2301-05	POWER TRANSFORMER	K
36 2B	L01-2302-05	POWER TRANSFORMER	T
36 2B	L01-2305-05	POWER TRANSFORMER	UM
36 2B	L01-2305-05	POWER TRANSFORMER	HX
36 2B	L01-2305-05	POWER TRANSFORMER	UE
36 2B	L01-2306-05	POWER TRANSFORMER	EE
36 2B	L01-2307-05	POWER TRANSFORMER	P
37 1B	N08-0128-35	GND TERMINAL	
38 1B	N09-0292-05	SCREW	
39 1A	N09-0377-05	SCREW(METALLIC CABINET)	
40 2B	N29-0033-05	PUSH RIVET	
41 1B	S31-2050-05	SLIDE SWITCH	UM
41 1B	S31-2050-05	SLIDE SWITCH	HX
41 1B	S31-2050-05	SLIDE SWITCH	EE
41 1B	S31-2050-05	SLIDE SWITCH	UE
42 2A	S40-1022-05	PUSH SWITCH	UM
42 2A	S40-1022-05	PUSH SWITCH	HX

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42 2A	S40-1022-05	PUSH SWITCH	UE
42 2A	S40-1024-05	PUSH SWITCH	KP
42 2A	S40-1025-05	PUSH SWITCH	TE
42 2A	S40-1025-05	PUSH SWITCH	E
-	T90-0121-05	FM INDOOR ANTENNA	
43 1B	T90-0104-05	AM LOOP ANTENNA	KP
43 1B	T90-0104-05	AM LOOP ANTENNA	UM
43 1B	T90-0104-05	AM LOOP ANTENNA	HX
43 1B	T90-0104-05	AM LOOP ANTENNA	UE
43 1B	T90-0104-05	AM LOOP ANTENNA	E
44 1B	T90-0112-05	BAR ANTENNA	TE
Q15,16	V01-0769-00	2SA769	P
Q15,16	V02-0633-10	2SB633*1	KU
Q15,16	V02-0633-10	2SB633*1	MH
Q15,16	V02-0633-10	2SB633*1	XT
Q15,16	V02-0633-10	2SB633*1	EE
Q15,16	V02-0633-10	2SB633*1	UE
Q17,18	V03-1827-00	2SC1827	P
Q17,18	V04-0613-10	2SD613*1	KU
Q17,18	V04-0613-10	2SD613*1	MH
Q17,18	V04-0613-10	2SD613*1	XT
Q17,18	V04-0613-10	2SD613*1	EE
Q17,18	V04-0613-10	2SD613*1	UE
45 2B,3B	X05-1940-10	TUNER PCB ASSY	KP
45 2B,3B	X05-1940-10	TUNER PCB ASSY	UM
45 2B,3B	X05-1940-10	TUNER PCB ASSY	UE
45 2B,3B	X05-1940-10	TUNER PCB ASSY	H
45 2B,3B	X05-1940-71	TUNER PCB ASSY	X
45 2B,3B	X05-1942-72	TUNER PCB ASSY	TE
45 2B,3B	X05-1942-73	TUNER PCB ASSY	*E
46 1A,2B	X09-1670-11	AUDIO AMP PCB ASSY	*K
46 1A,2B	X09-1670-11	AUDIO AMP PCB ASSY	P
46 1A,2B	X09-1670-52	AUDIO AMP PCB ASSY	*T
46 1A,2B	X09-1670-82	AUDIO AMP PCB ASSY	*U
46 1A,2B	X09-1670-82	AUDIO AMP PCB ASSY	MH
46 1A,2B	X09-1670-82	AUDIO AMP PCB ASSY	UE
46 1A,2B	X09-1670-82	AUDIO AMP PCB ASSY	X
46 1A,2B	X09-1672-72	AUDIO AMP PCB ASSY	*E
46 1A,2B	X09-1672-72	AUDIO AMP PCB ASSY	E

TUNER (X05-1940-10)

C1	C24-1210-71	ELECTRO 100UF 16WV	
C2	C55-1710-38	CERAMIC 0.01UF Z	
C3	C55-1710-38	CERAMIC 0.01UF Z	E
C4	C24-1710-51	ELECTRO 1UF 50WV	
C5	C24-1022-61	ELECTRO 22UF 10WV	
C6,7	C55-1710-38	CERAMIC 0.01UF Z	
C8	C24-1722-51	ELECTRO 2.2UF 50WV	
C9	C52-1733-16	CERAMIC 330PF K	
C10	C24-1710-51	ELECTRO 1UF 50WV	
C11,12	C55-1710-38	CERAMIC 0.01UF Z	
C13,14	C24-1210-61	ELECTRO 10UF 16WV	
C21	C24-1710-51	ELECTRO 1UF 50WV	
C22	C24-1247-71	ELECTRO 470UF 16WV	
C23,24	C24-1447-51	ELECTRO 4.7UF 25WV	
C25,26	C91-0186-05	CERAMIC 0.001UF K	EE
C25,26	C91-0186-05	CERAMIC 0.001UF K	X
C25,26	C91-0187-05	CERAMIC 0.0015UF K	K
C27,28	C24-1722-51	ELECTRO 2.2UF 50WV	
C29,30	C91-0187-05	CERAMIC 0.0015UF K	EE
C29,30	C91-0187-05	CERAMIC 0.0015UF K	X

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KR-65/65L

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Ref. No. 参照番号	Parts No. 部品番号	Description 部品名／規格	Remarks 備考
C29,30	C91-0188-05	CERAMIC 0.0018UF K	K
C31	C91-0141-05	CERAMIC 0.047UF M	
C32	C47-1736-15	POLYSTY 360PF J	
C33	C24-1733-51	ELECTRO 3.3UF 50WV	
C34,35	C24-1722-51	ELECTRO 2.2UF 50WV	
C36	C71-1722-15	CERAMIC 220PF J	KX
C36	C71-1747-05	CERAMIC 47PF J	EE
C37	C91-0139-05	CERAMIC 0.01UF M	E
C38	C55-1722-38	CERAMIC 0.022UF Z	E
C39	C71-1710-02	CERAMIC 10PF D	E
C41	C71-1708-02	CERAMIC 8PF D	KE
C41	C71-1708-02	CERAMIC 8PF D	X
C42	C70-1712-05	CERAMIC 12PF J	
C43	C47-1733-15	POLYSTY 330PF J	E
C44	C63-1739-05	CERAMIC 39PF J	E
C45	C47-1713-15	POLYSTY 130PF J	E
C46	C91-0141-05	CERAMIC 0.047UF M	E
C47	C24-1210-61	ELECTRO 10UF 16WV	E
C48,49	C91-0139-05	CERAMIC 0.01UF M	KE
C48,49	C91-0139-05	CERAMIC 0.01UF M	X
C49	C91-0141-05	CERAMIC 0.047UF M	E
C50	C24-1710-51	ELECTRO 1UF 50WV	
C51	C24-1022-61	ELECTRO 22UF 10WV	
C52	C52-1710-26	CERAMIC 0.001UF K	
C53	C24-1010-71	ELECTRO 100UF 10WV	
C54,55	C91-0139-05	CERAMIC 0.01UF M	
C56	C26-1747-47	NP-ELEC 0.47UF 50WV	
C57	C24-1022-61	ELECTRO 22UF 10WV	
C58	C24-1447-51	ELECTRO 4.7UF 25WV	
C59,60	C91-0139-05	CERAMIC 0.01UF M	
C61	C24-1210-61	ELECTRO 10UF 16WV	
C62	C55-1722-38	CERAMIC 0.022UF Z	
C63	C91-0139-05	CERAMIC 0.01UF M	KE
C63	C91-0139-05	CERAMIC 0.01UF M	X
C64	C91-0141-05	CERAMIC 0.047UF M	
C65	C24-1210-61	ELECTRO 10UF 16WV	
TC1,2	C05-0303-05	TRIMMER CAPACITOR	E
101 2B	E20-0232-05	TERMINAL BOARD(ANTENNA)	E
101 2B	E20-0439-05	TERMINAL BOARD(ANTENNA)	KX
CF1	L72-0126-05	CERAMIC FILTER	EE
CF1,2	L72-0136-05	CERAMIC FILTER	KX
CF1,2	L79-0135-05	FILTER SET	EE
CF2	L72-0131-05	CERAMIC FILTER	EE
CF3	L72-0099-05	CERAMIC FILTER	
L1	L40-1092-45	INDUCTOR	
L2	L31-0458-05	RF COIL(MW)	KE
L2	L31-0458-05	RF COIL(MW)	X
L3	L32-0255-05	OSCILLATING COIL(MW)	
L4	L32-0256-05	OSCILLATING COIL(LW)	E
L5	L79-0119-05	FILTER	E
L6	L30-0316-05	FM-IFT	
L7	L30-0317-05	FM-IFT	
L8	L30-0362-05	AM-IFT	
L9	L40-1021-45	INDUCTOR	KE
L9	L40-1021-45	INDUCTOR	X
L9	L40-1035-05	INDUCTOR	E
L10	L79-0125-05	FILTER	EE
L11	L79-0140-05	FILTER	
L12	L40-1092-41	INDUCTOR	E
L13	L40-1092-45	INDUCTOR	E

For TUNER
K: X05-1940-10
X: X05-1940-71
E: X05-1942-73
E: X05-1942-72

Ref. No. 参照番号	Parts No. 部品番号	Description 部品名／規格	Remarks 備考
VR1	R12-3302-05	TRIMMING POT. 10KB	
VR2	R12-4302-05	TRIMMING POT. 50KB	EE
S1	S40-6014-05	PUSH SWITCH	E
S2	S42-2045-05	PUSH SWITCH	
D1,2	V11-0076-05	1S5555	EE
D1,2	V11-0271-05	1S2076	
IC1	V30-0246-10	AN377	
IC2	V30-0193-05	HA1196-01	
IC3	V30-0439-10	LA1130	
Q1	V03-1923-00	2SC1923	
Q2	V03-0945-90	2SC945(A)	EE
Q2	V03-1684-00	2SC1684	EE
Q3,4	V03-0945-90	2SC945(A)	
Q3,4	V03-1684-00	2SC1684	
Q3,4	V03-2320-00	2SC2320	
Q6	V01-0564-00	2SA564A	
Q6	V01-0733-90	2SA733(A)	
Q6	V01-0999-00	2SA999	
Q7	V09-0143-00	2SK136	E
102 2B	W02-0061-05	FM FRONT END	KX
102 2B	W02-0062-05	FM FRONT END	E
102 2B	W02-0503-05	FM FRONT END	E

AUDIO (X09-1670-11)

PL1-4	B30-0372-05	LAMP	
PL5-8	B30-0374-05	LAMP	*
C1,2	C25-1433-57	LL-ELEC 3.3UF 25WV	
C3,4	C71-1710-15	CERAMIC 100PF J	KU
C3,4	C71-1710-15	CERAMIC 100PF J	T
C3,4	C71-1722-15	CERAMIC 220PF J	E
C5,6	C45-1712-35	MYLAR 0.012UF J	
C7,8	C45-1733-25	MYLAR 0.0033UF J	
C9,10	C52-1722-26	CERAMIC 0.0022UF K	E
C9,10	C71-1710-15	CERAMIC 100PF J	KU
C9,10	C71-1710-15	CERAMIC 100PF J	T
C11,12	C24-6547-51	ELECTRO 4.7UF 35WV	
C13,14	C45-1718-36	MYLAR 0.018UF K	
C15,16	C25-1710-57	LL-ELEC 1UF 50WV	
C17,18	C71-1718-15	CERAMIC 180PF J	
C19,20	C71-1722-15	CERAMIC 220PF J	
C21,22	C24-6510-71	ELECTRO 100UF 35WV	
C23,24	C24-1433-61	ELECTRO 33UF 25WV	
C25,26	C71-1747-05	CERAMIC 47PF J	
C27,28	C71-1722-05	CERAMIC 22PF J	
C29,30	C24-1247-61	ELECTRO 47UF 16WV	
C31,32	C24-1410-61	ELECTRO 10UF 25WV	
C33,34	C45-1747-37	MYLAR 0.047UF M	
C35,36	C26-1210-67	NP-ELEC 10UF 16WV	
C37,38	C45-1718-36	MYLAR 0.018UF K	
C39,40	C45-1782-36	MYLAR 0.082UF K	
C41,42	C45-1747-26	MYLAR 0.0047UF K	
C43,44	C45-1722-36	MYLAR 0.022UF K	
C45,46	C24-1410-61	ELECTRO 10UF 25WV	
C47,48	C24-1047-61	ELECTRO 47UF 10WV	
C49,50	C52-1756-16	CERAMIC 560PF K	E
C51	C24-1210-71	ELECTRO 100UF 16WV	
C51	C24-6510-71	ELECTRO 100UF 35WV	
C53	C24-1222-71	ELECTRO 220UF 16WV	
C54,55	C90-0472-05	ELECTRO 4700UF 35WV	
C56	C24-1247-71	ELECTRO 470UF 16WV	
C57,58	C24-1247-61	ELECTRO 47UF 16WV	

For AUDIO
K: X09-1670-11
T: X09-1670-52
U: X09-1670-82
E: X09-1672-72

KR-65/65L KR-65/65L

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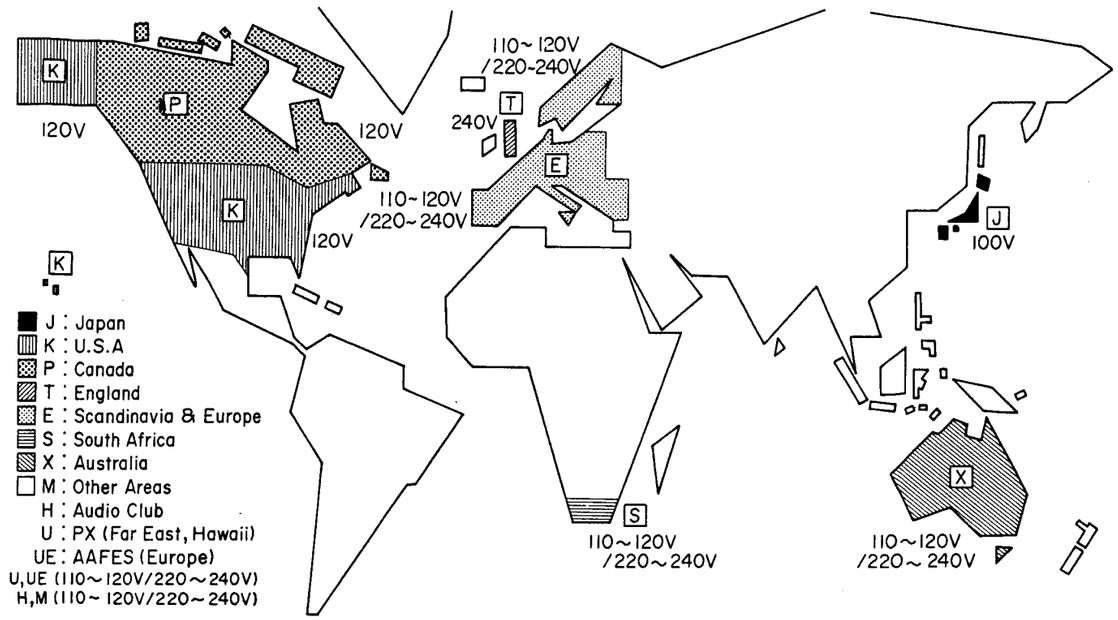
C59 -61	C54-2710-39	CERAMIC 0.01UF	P	
C63 ,64	C55-1710-38	CERAMIC 0.01UF	Z	
C65 ,66	C71-1768-05	CERAMIC 68PF	J	E
C67 ,68	C71-1722-15	CERAMIC 220PF	J	KE
C69 -72	C52-1756-16	CERAMIC 560PF	K	E
201 2A	E11-0085-05	PHONE JACK		
202 2A	E13-0433-05	PHONO JACK		
203 1B	E20-0815-05	TERMINAL BOARD		
F1	F05-2521-05	FUSE 2,5A		U
F1	F05-2528-05	FUSE F2,5A		E
F1	F05-2529-05	FUSE 2,5A		K
F2	F05-1227-05	FUSE 1,25A		ET
F2	F05-1521-05	FUSE 1,5A		U
F3	F05-1023-05	FUSE 1A		U
F3	F05-1024-05	FUSE 1A		K
F3	F06-1021-05	FUSE F1A		ET
-	J13-0041-05	FUSE HOLDER		KU
-	J13-0054-05	FUSE HOLDER		ET
R39 ,40	R43-1222-15	FL-PROOF RD220	J 2E	
R43 ,44	R43-1210-15	FL-PROOF RD100	J 2E	
R51 -54	R43-1233-15	FL-PROOF RD330	J 2E	
R55 -58	R92-0166-05	METAL-PLATE0,22	K 3D	
R59 ,60	R47-5447-95	FL-PROOF RS4,7	J 3A	EU
R59 ,60	R47-5447-95	FL-PROOF RS4,7	J 3A	X
R59 ,60	R92-0238-05	RN 4,7	J 3A	K
R71 ,72	R47-5427-15	FL-PROOF RS270	J 3A	
R75 ,76	R43-1282-05	FL-PROOF RD82	J 2E	
R102	R43-1247-95	FL-PROOF RD4,7	J 2E	
R103	R47-5522-15	FL-PROOF RS220	J 3D	
R104	R47-5556-05	FL-PROOF RS56	J 3D	U
R104	R92-0239-05	RN 56	J 3D	KE
R104	R92-0239-05	RN 56	J 3D	X
R105	R47-5582-15	FL-PROOF RS820	J 3D	
R106,107	R43-1210-15	FL-PROOF RD100	J 2E	
R108	R92-0173-05	RC 2,2M	M 2H	K
R109	R40-8327-26	RC 2,7K	K 2H	
VR1	R06-5068-05	POTENTIOMETER(VOL)		
VR2	R01-5034-05	POTENTIOMETER(BAL)		
VR3 ,4	R06-5069-05	POTENTIOMETER(BASS,TRE)		
S1	S40-2126-05	PUSH SWITCH(LOUDNESS)		
S2	S42-2046-05	PUSH SWITCH(SPEAKER)		
S3	S42-4016-05	PUSH SWITCH(INPUT SEL)		
D1 -4	V11-1301-40	S2V20*1		
D1 -4	V11-2400-40	GP20DL		
D5 -8	V11-0295-05	W06B		
D9	V11-4108-80	XZ-122		
D10	V11-0076-05	1S1555		
D10	V11-0271-05	1S2076		
IC1	V30-0349-10	UPC4558C		
IC1	V30-0405-10	AN6552		
IC2	V30-0478-10	UPC78M12H		
Q1 -4	V01-0921-10	2SA921		
Q1 -4	V01-0992-00	2SA992		
Q5 -8	V03-1845-20	2SC1845(F,E,U)		
Q5 -8	V03-1980-30	2SC1980(S,T,U)		
Q9 ,10	V03-1845-30	2SC1845(E,U)		
Q11 ,12	V03-2003-00	2SC2003		
Q13 ,14	V01-0954-00	2SA954		
Q19	V03-0828-10	2SC828A		
Q19	V03-0945-90	2SC945(A)		
Q19	V03-2320-00	2SC2320		
FRONT END				
IC1	V30-0345-10	SC114		
Q1	V09-0121-10	2SK55		
Q1	V09-0124-20	2SK61		
Q1	V09-0154-00	2SK161		
Q1	V09-0151-10	2SK193		

WORLD MAP & AREA CODE



Note:

Component and circuitry are subject to modification to insure best operation under differing local conditions. This manual is based on, the U.S. (K) standard, and provides information on regional circuit modification through use of alternate schematic diagrams, and information on regional component variations through use of parts list.

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